

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : KUDO NORIO

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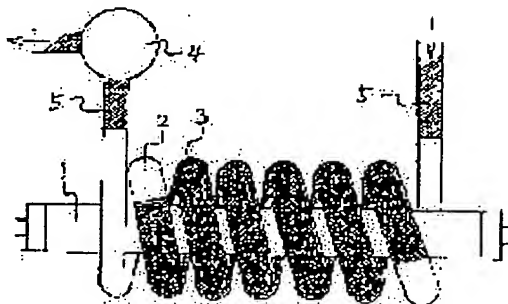
(72)Inventor : YAMAZAKI SUZUKO

## (54) WASTEWATER TREATMENT SYSTEM

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To enhance the efficiency of a photocatalyst detoxifying a wastewater containing an organochlorine compd. while enabling the recovery and reutilization of the photocatalyst.

**SOLUTION:** A glass pipe 2 being spirally wound around a light source pipe 1 emitting ultraviolet rays is packed with pelletized titanium oxide 3, and a wastewater containing an organochlorine compd. is passed through the glass pipe 2. Chloride ions formed by the decomposition of the organochlorine compd. in wastewater are reacted with calcium carbonate to produce calcium chloride. This calcium chloride is utilized as a desiccant or an antifreezing agent.



## LEGAL STATUS

[Date of request for examination]

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CLAIMS

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[Claim(s)]

[Claim 1] The method which disassembles the organochlorine compound which fills up with the titanium dioxide of a pellet type the glass tube which surround light source tubing of ultraviolet radiation in the shape of a spiral, and is contained in wastewater.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001] The method which removes the organochlorine compound contained in [technical field to which invention belongs] wastewater [0002] The difficulty that the ozone which is toxic in addition to ultraviolet radiation must be used together in order to gather reaction effectiveness although titanium oxide was made to adhere to glass and is conventionally used with the binder as an organochlorine compound removal method which uses [Prior-art] titanium oxide as a photocatalyst is upwards, and it is [0003] in which recovery reuse of a catalyst is impossible. It is the technical problem of this invention not to need concomitant use of [Object of the Invention] ozone, and to enable recovery reuse of a catalyst.

[0004] The glass tube which surround the light source tubing 1 of the [The means for solving a technical problem] ultraviolet radiation in the shape of a spiral is filled up with the titanium oxide of a pellet type, and it lets wastewater pass.

[0005] The chlorine ion and calcium carbonate which disassembled and generated the organochlorine compound under [gestalt of implementation of invention] wastewater are made to react, a calcium chloride is manufactured, and it uses as a drying agent or an antifreezing agent.

[0006] It can use for wastewater of [effect-of-the-invention] dry-cleaning works, a chip fabrication factory, etc., and well water purification.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the side elevation of this invention.

[Description of Notations]

1 is light source tubing.

2 is a glass tube.

3 is a titanium-dioxide pellet.

4 is a pump.

5 is a full run tube.

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[Translation done.]

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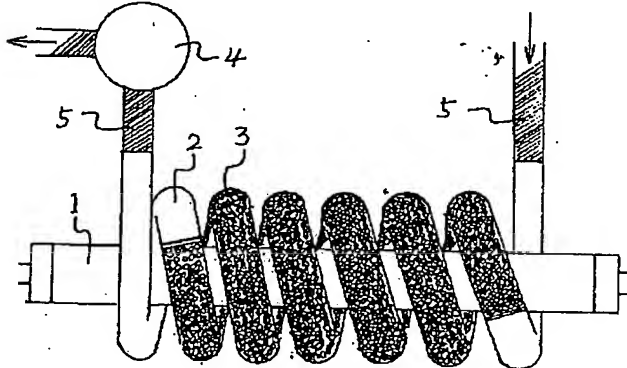
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**DRAWINGS**

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[Drawing 1]



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[Translation done.]

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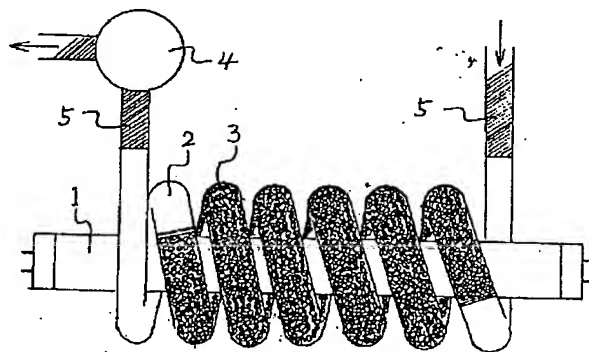
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BA48A CA05 CA19 EA02X  
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(54)【発明の名称】 排水処理方式

(57)【要約】

【課題】 有機塩素化合物を含む排水を無害化する光触媒の効率を高めると同時に、触媒の回収再利用を可能にする。

【解決手段】 紫外光の光源管をスパイラル状に取り巻くガラス管を設け、その中にペレット状酸化チタンを充填して、有機塩素化合物を含んだ排水を通す。



## 【特許請求の範囲】

【請求項1】紫外光の光源管をスパイラル状に取り巻くガラス管に、ペレット状の二酸化チタンを充填し、排水に含まれる有機塩素化合物を分解する方式。

## 【発明の詳細な説明】

【0001】【発明の属する技術分野】排水に含まれる有機塩素化合物を除去する方式

【0002】【従来の技術】酸化チタンを光触媒とする有機塩素化合物除去法としては、従来、酸化チタンを結合剤でガラスに付着させて利用しているが、反応効率を上げるために、紫外光以外に毒性のあるオゾンを用いなければならないという難点がある上に、触媒の回収再利用が不可能である

【0003】【発明が解決しようとする課題】オゾンの併用を必要とせず、かつ触媒の回収再利用を可能にすることが、本発明の課題である。

【0004】【課題を解決するための手段】紫外光の光\*

\* 源管1をスパイラル状に取り巻くガラス管にペレット状の酸化チタンを充填して排水を通す。

【0005】【発明の実施の形態】排水中の有機塩素化合物を分解して生成した塩素イオンと炭酸カルシウムを反応させて、塩化カルシウムを製造し、乾燥剤や凍結防止剤として利用する。

【0006】【発明の効果】ドライクリーニング工場や半導体工場などの排水や、井戸水の浄化に利用できる。

## 【図面の簡単な説明】

【図1】本発明の側面図である。

## 【符号の説明】

- 1は光源管
- 2はガラス管
- 3は二酸化チタンペレット
- 4はポンプ
- 5はフルランチューブ

【図1】

